

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/22/08 has been entered.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 23 is a single means claim where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983). The term "receiver unit" in Claim 23 is considered similar to a "means" because it does not recite specific "structure, material or acts in support thereof" for performing the recited functions (i.e., the receive function). Since there is only one recited "means" (the "receiver unit") in independent claim 23, the claim is, in effect, single means claim that are improper under 35 U.S.C. 112, first paragraph. In essence, the claim covers *every conceivable means* for achieving the desired result (i.e., receiving a data packet from the module of claim 18). The specification, however, discloses only those means known to applicant. See In re Hyatt, 708 F.2d 712,

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714-715, 218 USPQ 195, 197 (Fed. Cir. 1983). Consequently, the specification is non-enabling for failing to disclose all possible means for performing the stated function and independent claim 23 constitutes improper single means claim.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 23-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims fail to further limit its independent claim, since it already states that module is configured to transmit and receive a data package.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 7-14 and 22-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Deml et al. (US 6,996,126) in view of Nishimura (US 5,570,362).

with regard to claims 1,18, 23-26 (figures 1-2, 5), Deml teaches:

A system comprising a plurality of connected modules (26, 28, 30) and providing data communication between the connected modules, wherein individual ones of said modules are operative to transmit to and receive from one another of said modules a data package carrying a message (column 3, lines 10-20),

wherein an individual one of the modules includes a generator (hardware/software) of a data link layer and a generator of a physical layer (hardware/software) for encapsulating the message (column 4, lines 5-23),

wherein said data package is a block of data or a data packet or a datagram, the data package being composed of a sequence of bits arranged in fields, the fields being disposed in a plurality of layers constituting a layered structure (column 4, lines 5-23), comprising:

the physical layer being provided by a physical layer generator in one of said modules and serving to convey a bit stream through a network of said modules (Deml implicitly teaches a physical layer. See figure 1, it shows the wireless devices communicating with radio access network through antennas over an air interface. Having data being transmit through an air interfaces shows that network implicitly has a physical layer.),

a data link layer (68, Ethernet header inserter) comprising a data link layer control section for carrying data link layer control data and a data section for carrying data for said other layers, the data link layer being provided by a data-link layer generator in said one module and being enclosed by the segments of said physical layer (column 5, lines 40-45), and

a transport layer (66, IP header inserter) enclosed by the data link layer, the transport layer being provided by a transport layer router in said one module and having a connection number field for identifying an object communicating via said router within said module, the transport layer defining a message in said data section (column 5,

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lines 40-55), which message is configured according to a transport layer protocol and comprises (see figures 4 and 5):

- a payload (AAL2/5 packet) and a first header field for format of said payload (protocol ID),

- a second header field for start of said payload in said message (IP header checksum),

- a third header field for length of said message (Total length),

- a fourth header field for version of said transport layer protocol (version),

- a fifth header field for message group identity establishing receiving resource format of said payload (type of service),

- a sixth header field providing a message identity (identification) ,

- a seventh header field for identifying an object in the module (flags), and

- an eighth header field for sequencing a message relative to other messages (fragmentation).

Deml discloses all of the subject matter as described above except for the physical layer having a first segment and a second segment encapsulating other ones of the layers in said layered structure.

Nishimura further describes the physical layer encapsulating ATM (ATM is another form of layer 2 data link layer) data (see figure 1). Nishimura teaches that the physical layer is composed of two sub-layers (column 8, lines 60-65). One of the sub-layer is called physical media sub-layer, and the other is called transmission convergence sub-layer. Media sub layer will be in front of layer 2 since it will provide

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timing information (column 9, lines 1-5) and transmission convergence will be behind the layer 2 data since it ensures the correctness of the payload (column 9, lines 5-10). Also Nishimura teaches that physical layer is used to provide cell synchronization, header error control, sequence confirmation and correction, bit timing control (column 6, lines 5-17).

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made for the physical layer in Deml's system to have two segments encapsulate the other layers of data as taught by Nishimura, which explicitly teaches the functions of a computer's physical layer for transmitting information.

With regard to claim 2, Deml further teaches: wherein individual ones of said modules comprise a mobile communication device from one of a cell, mobile or satellite telephone, a personal digital assistant, or a peripheral of a cell, a peripheral of a mobile station or satellite telephone, or a peripheral or a personal digit assistant (column 3, lines 10-15)

With regard to claim 3, Deml further teaches: wherein individual ones of said modules comprise one or more objects, in addition to said object of said one module, communicating said message with one another; and said individual modules further comprise a data link layer generator and physical layer generator, in addition to said-data link layer generator and said physical layer generator of said one module, adapted to encapsulate said message according to a data link layer protocol and to a physical layer protocol, respectively (column 4, lines 15-34).

With regard to claims 7, 17, and 22, Deml further teaches: wherein said data link control data comprises a checksum field following said message (CRC footer, column 4, lines 10-16).

With regard to claim 8, Nishimura teaches: said first segment of said physical layer comprises a media field for defining media, across which the data package is transferred (column 9, lines 1-5)

With regard to claim 9, Nishimura teaches: a synchronization field for synchronizing the receiving module with the transmitting module (column 9, lines 1-5: timing information for cell synchronization)

With regard to claim 10, Nishimura teaches: wherein said second segment of the physical layer comprises an index byte for providing the receiving module with information regarding segmentation or partitioning of data contained in a message (**sequence** confirmation and correction, it must have a field for sequence number field make sure the sequence is correct. The sequence number field corresponds to the partition of the data.)

With regard to claim 11, Nishimura teaches: wherein said second segment further comprises a sequence and acknowledge field for providing a receiving module with information whether said data package is an acknowledgement message or an ordinary message (sequence **confirmation** and correction, acknowledge field for confirming the proper sequence number.)

With regard to claim 12, Nishimura teaches: comprises a sequence and an acknowledge field, and is adapted to inform whether an error was identified in the

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received data package, when said data package is an acknowledgement message (sequence confirmation and **correction**: it must identified errors in order to provide sequence correction.)

With regard to claim 13, wherein said sequence and acknowledgement field is further adapted to inform a receiving module that a sequence number in said receiving module should be reset (column 6, lines 10-15, and also see claim 10).

With regard to claim 14, wherein said sequence and acknowledgement field is further adapted to recognize acknowledgement messages and detect missing data packages (column 6, lines 10-15 and also see claim 12)

7. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deml et al. and Nishimura as applied to claim 1 above, and further in view of Hwang et al. (US 7,123,628).

with regard to claims15-16:

Deml Nishimura discloses all of the subject matter as described above except for wherein wherein said second segment further comprises a fill field for ensuring that all data packages sent over said port connector contain an even amount of bytes, (claim 15), or comprises a parity field for storing parity calculated on the basis of the data package excluding the parity field (claim 16).

Hwang et al teaches communication system with further details on the physical layer fields. It teaches using the physical layer to synchronization between nodes (column8, lines 23-30: step A7 in figure 7a). Thus the examiner views that the

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PHY_SYNC_REQ message has a synchronization field in it (claim 9). In column 14, table 2 and table 3 has physical header format, which has MAC frame type (media field, claim 8), Padding (fill field, claim 15), Eof (a parity field, claim 16), CRC (index byte, claim 10). In figure 7b, teaches how physical layers can receives channel acknowledgement from other nodes (column 8, lines 55-63, step B7). Thus the examiner views that the Channel request acknowledgement is an acknowledgement field of the message (claim 11). Also Hwang teaches how the acknowledgement message can identified problem by last 3 bits in the received message (column 13, lines 35-45, claim 12). Thus the examiner views the Hwang et al teaches all those limitations above in order to have wireless stations to transmits multimedia information through the network with better efficiency (column 2, lines 45-50)

Therefore it would have been obvious to one having ordinary skill in the art at the time invention was made to all these physical layer header fields as taught by Hwang et al. in system of Deml and Nishimura in order to increase network efficiency to handle multimedia information over wireless channels.

Response to Arguments

8. Applicant's arguments with respect to claims 1-3, 7-18, and 22-26 have been considered but are moot in view of the new ground(s) of rejection. However the examiner will still like to address the applicant remarks.

9. The examiner thanks the applicant for acknowledging that the Deml teaching encapsulated packets. However the examiner disagrees with the applicant that Deml

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fails to state the layers and headers that are suppose to present in encapsulated data.

The examiner cites the Deml follows the OSI model for an computer systems, where all computer systems have seven layers (physical, data link, network, transport, session, presentation, and application.) See cited information: OSI model, page 540: the Newton's Telecom Dictionary, published February 2002. Since Deml follows the OSI model, the examiner views Deml will implicitly teach physical layer (layer 1), and the physical layer encapsulated the Ethernet layer (layer 2). Also Deml teaches the Ethernet layer encapsulating the IP layer (layer 3). Therefore Deml teaches the layers and headers cited in claimed invention. If the applicant disagrees with Deml teaching those layers, the applicant should explain how the applicant's claimed invention layers are different from the OSI model that most computers used to transmit and receive data from each other.

Even though Deml teaches using partial header data to construct the complete header for layers 2 (Ethernet) and 3 (IP), Deml still reads on claimed invention. The claimed invention only states layers having certain header and data fields, and the examiner clearly shows that Deml teaches those layers with those header and data fields. Deml does not explicitly teach the physical layer. However, the examiner views figure 1 that shows air interface that transmits/receives the data from mobile station to radio access network as data transmitting through a physical layer. Thus the Deml implicitly teaches a physical layer of OSI model in the base station/mobile station.

10. The examiner disagrees with the applicant about how Deml fails to teach seven header field and eight header field. Deml can not teach an IP header flags field being

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mapped to connection number or fragment field being mapped to transaction ID, but the claim does not state that seven header field is connection number and eight header field is a transaction ID. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., connection number and transaction ID) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS R. SMITH whose telephone number is (571)270-1096. The examiner can normally be reached on Mon-Thurs: 7:30 am - 5:00 p.m. and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MRS 1/21/09

/Wing F. Chan/
Supervisory Patent Examiner, Art Unit 2419
1/28/09